

**IMPROVED BUILDING CLADDING PANEL**

**Background of the Invention**

**The Field of the Invention**

5 [0001] The present invention pertains to an improved building cladding panel for use on roofs and/or walls of buildings to provide an outer surface substantially impervious to any form of weather related damage, including rain, sleet, snow, and hail.

**The Prior Art**

[0002] There has been a long-standing problem in the roofing industry of providing roofing materials which not only have a substantial life time, but which will be resistant to damage from all forms of weather, such as hail. The annual damage to roofs by hail storms is significant and costs the insurance industry a great amount of money in roof repairs and/or replacements. What is needed is a building panel which not only provides the required water resistance, but which will also provide protection for the roof, and other external surfaces of the building, from damage 15 from other weather causes, such as hail and wind blown debris.

[0003] U. S. Patent No. 2,091,918 to Finck show alternate layers of corrugated paper or cardboard separated by metal foil to form a roof insulating material. The outer surfaces of the thus constructed roofing panel are metal foil and would be subject to damage by hail, wind blown debris, and the like.

20 [0004] U. S. Patent No. 2,029,679 to Seving et al shown, in Fig 7, an embodiment of insulation comprising layers of corrugated material separated by foil sheets. The outer layers are formed of a transparent material loaded with metal particles and air bubbles.

[0005] U. S. Patent No. 3,041,219 to Steck shows, in Fig. 11, an arrangement somewhat similar to that of Seving et al in that it is clad with metal sheets.

[0006] U. S. Patent No. 4,507,347 to Lupton shows the combination of a foil sheet and a corrugated sheet formed as a laminate for roofing. This invention employs corrugated PVC sheeting as the intermediate member.

[0007] U. S. Patent No. 5,561,959 to Alderman et al describes an apparatus for forming insulated roofing similar to that described in the above noted patents.

[0008] U. S. Patent Application Publication No. 2002/0108349 and PCT Publication WO 99/04966 both show insulative panel arrangements using honeycombs rather than corrugations.

## **Summary of the Invention**

[0009] The subject invention relates to an improved building construction panel used to protect the outside surfaces of a building from all forms of weather related damage. The subject panel is treated to be moisture proof, weather resistant, fire resistant, not attractive to insects, fungus and/or mold and uses only environmentally friendly materials. The construction of the subject panel promotes the rebounding of objects striking its outer surface without damage to the panel.

### **Brief Description of the Drawings**

[0010] The present invention will now be described with reference to the accompanying drawings, in which:

[0011] Fig. 1 is a section through the building panel of the present invention:

[0012] Fig. 2 is a perspective view of a building panel formed in accordance with the present invention.

### **Detailed Description of the Invention**

[0013] Referring now to the drawings, Figure 1 is a section through a building panel 10 constructed in accordance with the principles of the present invention. The panel is formed as a laminate by a first corrugated member 12, an intermediate foil layer 14, a second corrugated member 16, and outer foil layers 18, 20. The corrugated members 12 and 16 are formed of preferably double walled composition material, paper, or plastics material treated to have water repelling characteristics, fire retardant characteristics, anti-fungal and anti-mold characteristics. Most importantly for the present invention, the outer foils provide rebound characteristics for objects striking the panel.

[0014] Preferably the subject panel 10 will be made with one member 12 or 16 of test "B" fluting (corrugations  $\frac{1}{8}$ " apart, or 8 per inch) and the other member 12 or 16 of test "C" fluting (corrugations  $\frac{5}{32}$ " apart or 5 per inch). Each of these members would have a bursting strength of approximately 200 pounds. When laminated together, they are approximately  $\frac{5}{16}$ " thick and have a bursting strength of more than 350 pounds. With the intermediate foil layer 14 between the members 12, 16, and the outer foils applied, the resulting panel has superior rebounding characteristics, sound proofing, and insulative qualities.

[0015] The outer facing side of the panel 10 can also be coated with a nylon webbing or waterproof latex coating (neither of which has been shown). The addition of the webbing or coating will increase the strength of the panel as well as improve the rebounding characteristics.

[0016] The rebounding characteristic is import to the invention in that one surface foil of the panel is constructed in such manner as to cause anything striking the panel, such as hail and/or small wind blown debris, to rebound from the surface of the panel without causing denting and/or

any other damage to the surface. Thus the panel will be able to withstand, for example, a hail storm without sustaining permanent and unsightly damage to the panel.

[0017] Preferably the subject panel is treated to be water proof, fungus and mold resistant, as well as fire retardant.

5 [0018] It should further be noted that the subject invention provides a roofing panel which has improved insulating characteristics as well as sound dampening characteristics.

[0019] The present invention may be subject to many modifications and changes without departing from the spirit or essential characteristics thereof. The present embodiment should therefor be considered in all respects as illustrative and not restrictive of the scope of the subject  
10 invention as defined by the appended claims.